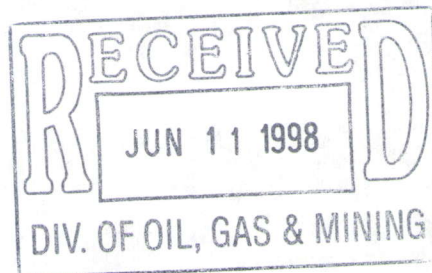


m/027/007

## DRUM MINE SOIL SAMPLES

Soil samples were collected on May 14, 1998. Nine (9) samples were collected from trenches dug with a small backhoe. The following is a description of each sample. The location of the samples is shown on Map 3.

SAMPLE #	SAMPLE DESCRIPTION
1	Area 5 - Near HG4&5, upper soil strata.
2	Area 5 - Southern part near haul road, lower soil strata.
3	Area 4 - Drainage south of ponds, composite of topsoil stockpile..
4	Area 4 - Drainage south of ponds, composite of 8' deep trench.
5	Area 1 - South central area, upper soil strata.
6	Area 1 - Northwest area, lower soil strata.
7	Area 9 - North of HG3, upper soil strata.
8	Area 11 - Drainage area approx. 1.5 miles west of site, composite 8' deep trench.
9	Area 7 - Drainage area Northeast of LG3, upper soil strata.



# Billing Statement

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Billed: 5/19/98  
Date Paid:

Invoice Number: 06-98010998

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

Account #  
Check #  
Cash

Laboratory Numbers	Quantity	Description	Price	Code	Amount
98010998 - 98011006	9	Analyses Requested	45.00	1	405.00
-		PO # 0213944			
-					
-					
-					
-					
-					

Total Due: 405.00

Amount Paid:

Balance: 405.00

Please Make Check Payable to: USU Analytical Laboratories

# Soil Test Report and Fertilizer Recommendations

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98

Date Completed: 6/2/98

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98010998

Grower's Comments:

Acres in Field:

Identification: 1

Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.2	Normal	
Salinity - ECe mmhos/cm	0.4		
Phosphorus - P ppm	2.2		50-70 lbs P2O5/A
Potassium - K ppm	174		0 lbs K2O/A
Nitrate-Nitrogen - N ppm	2.8		40-70 lbs N/A
Zinc - Zn ppm			
Iron - Fe ppm			
Copper - Cu ppm			
Manganese - Mn ppm			
Sulfate-Sulfur - S ppm			
SAR	3.0	Soil Not Sodic	
Organic Matter %	0.76		

### Notes

CEC = 16.2 meq/100 g

Manure is fine - the only problem might be high salts if lots of manure used.

# Soil Test Report and Fertilizer Recommendations

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98  
Date Completed: 6/2/98

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98010999      Grower's Comments:      Acres in Field:  
Identification: 2  
Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.0	Normal	
Salinity - ECe    mmhos/cm	0.4		
Phosphorus - P      ppm	1.0		50-70 lbs P2O5/A
Potassium - K      ppm	80		80-120 lbs K2O/A
Nitrate-Nitrogen - N   ppm	1.5		40-70 lbs N/A
Zinc - Zn            ppm			
Iron - Fe            ppm			
Copper - Cu        ppm			
Manganese - Mn    ppm			
Sulfate-Sulfur - S   ppm			
SAR	0.69	Soil Not Sodic	
Organic Matter      %	0.68		

Notes  
CEC = 13.8 meq/100 g

# Soil Test Report and Fertilizer Recommendations

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98

Date Completed: 6/2/98

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011000

Grower's Comments:

Acres in Field:

Identification: 3

Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.7	Very High	
Salinity - ECe mmhos/cm	0.7		
Phosphorus - P ppm	2.5		50-70 lbs P2O5/A
Potassium - K ppm	97		80-120 lbs K2O/A
Nitrate-Nitrogen - N ppm	1.5		40-70 lbs N/A
Zinc - Zn ppm			
Iron - Fe ppm			
Copper - Cu ppm			
Manganese - Mn ppm			
Sulfate-Sulfur - S ppm			
SAR	15.0	Soil Is Sodic	
Organic Matter %	0.51		

### Notes

CEC = 19.5 meq/100 g

Soil is sodic.

# Soil Test Report and Fertilizer Recommendations

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98

Date Completed: 6/2/98

Name: Jim Ashton

Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011001

Grower's Comments:

Acres in Field:

Identification: 4

Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.4	Normal	
Salinity - ECe mmhos/cm	5.6		
Phosphorus - P ppm	1.3		50-70 lbs P2O5/A
Potassium - K ppm	81		80-120 lbs K2O/A
Nitrate-Nitrogen - N ppm	9.3		40-70 lbs N/A
Zinc - Zn ppm			
Iron - Fe ppm			
Copper - Cu ppm			
Manganese - Mn ppm			
Sulfate-Sulfur - S ppm			
SAR	24	Soil Is Sodic	
Organic Matter %	0.43		

### Notes

CEC = 12.3 meq/100 g

Soil is sodic.

**Soil Test Report  
and  
Fertilizer Recommendations**

**USU Analytical Labs**

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98

Date Completed: 6/2/98

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011002

Grower's Comments:

Acres in Field:

Identification: 5

Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.1	Normal	
Salinity - E <sub>ce</sub> mmhos/cm	0.3		
Phosphorus - P ppm	1.9		50-70 lbs P <sub>2</sub> O <sub>5</sub> /A
Potassium - K ppm	179		0 lbs K <sub>2</sub> O/A
Nitrate-Nitrogen - N ppm	1.5		40-70 lbs N/A
Zinc - Zn ppm			
Iron - Fe ppm			
Copper - Cu ppm			
Manganese - Mn ppm			
Sulfate-Sulfur - S ppm			
SAR	2.36	Soil Not Sodic	
Organic Matter %	0.83		

**Notes**

CEC = 15.9 meq/100 g

For further assistance, please see your County Agent --

**Soil Test Report**  
**and**  
**Fertilizer Recommendations**

**USU Analytical Labs**

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98  
Date Completed: 6/2/98

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011003      Grower's Comments:      Acres in Field:  
Identification: 6  
Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Loamy Sand		
Lime	++	Normal	
pH	7.9	Normal	
Salinity - ECe    mmhos/cm	4.6		
Phosphorus - P      ppm	1.6		50-70 lbs P2O5/A
Potassium - K      ppm	46		140-180 lbs K2O/A
Nitrate-Nitrogen - N    ppm	1.3		40-70 lbs N/A
Zinc - Zn            ppm			
Iron - Fe            ppm			
Copper - Cu        ppm			
Manganese - Mn    ppm			
Sulfate-Sulfur - S    ppm			
SAR	7.58	Soil Not Sodic	
Organic Matter        %	0.31		

**Notes**

CEC = 30.1 meq/100 g



# Soil Test Report and Fertilizer Recommendations

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98

Date Completed: 6/2/98

Name: Jim Ashton

Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011004

Grower's Comments:

Acres in Field:

Identification: 7

Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Loamy Sand		
Lime	++	Normal	
pH	8.5	High	
Salinity - ECe mmhos/cm	1.4		
Phosphorus - P ppm	1.6		50-70 lbs P2O5/A
Potassium - K ppm	111		0 lbs K2O/A
Nitrate-Nitrogen - N ppm	5.2		40-70 lbs N/A
Zinc - Zn ppm			
Iron - Fe ppm			
Copper - Cu ppm			
Manganese - Mn ppm			
Sulfate-Sulfur - S ppm			
SAR	15.0	Soil Is Sodic	
Organic Matter %	0.58		

### Notes

CEC = 21.0 meq/100 g

Soil is sodic.

For further assistance, please see your County Agent --

# Soil Test Report and Fertilizer Recommendations

## USU Analytical Labs

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98

Date Completed: 6/2/98

Name: Jim Ashton

Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011005

Grower's Comments:

Acres in Field:

Identification: 8

Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.0	Normal	
Salinity - ECe mmhos/cm	20.0		
Phosphorus - P ppm	3.2		50-70 lbs P2O5/A
Potassium - K ppm	57		140-180 lbs K2O/A
Nitrate-Nitrogen - N ppm	6.0		40-70 lbs N/A
Zinc - Zn ppm			
Iron - Fe ppm			
Copper - Cu ppm			
Manganese - Mn ppm			
Sulfate-Sulfur - S ppm			
SAR	36.0	Soil Is Sodic	
Organic Matter %	0.49		

### Notes

CEC = 9.3 meq/100 g

Soil is sodic.

For further assistance, please see your County Agent --

**Soil Test Report**  
**and**  
**Fertilizer Recommendations**

**USU Analytical Labs**

Utah State University  
Logan, Utah 84322-4830  
(435) 797-2217  
(435) 797-2117 (FAX)

Date Received: 5/19/98  
Date Completed: 6/2/98

Name: Jim Ashton  
Address: Western States Minerals  
250 South Rock Blvd Suite 130  
Reno NV 89502

County:

Lab Number: 98011006      Grower's Comments:      Acres in Field:  
Identification: 9  
Crop to be Grown: Reclamation

Soil Test Results		Interpretations	Recommendations
Texture	Sandy Loam		
Lime	++	Normal	
pH	8.1	Normal	
Salinity - ECe    mmhos/cm	1.4		
Phosphorus - P      ppm	2.4		50-70 lbs P2O5/A
Potassium - K      ppm	218		0 lbs K2O/A
Nitrate-Nitrogen - N   ppm	24.2		40-70 lbs N/A
Zinc - Zn            ppm			
Iron - Fe            ppm			
Copper - Cu        ppm			
Manganese - Mn    ppm			
Sulfate-Sulfur - S   ppm			
SAR	2.78	Soil Not Sodic	
Organic Matter      %	0.51		

Notes  
CEC = 9.3 meq/100 g